

MBU

INTERNAL CYLINDRICAL GRINDING MACHINE

MBU 600

MBU 850

MBU 1000

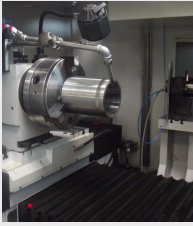
MBU 1200



GRINDEX

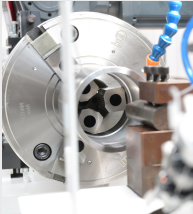
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IDEAL FOR MEDIUM TO LARGE SIZE AND/OR HEAVY WORKPIECES



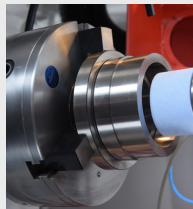
UNIVERSAL WORKHEAD

- Manual or automatic swiveling
- Speed range 0,1-500 RPM
- Roundness accuracy 0,5 μm



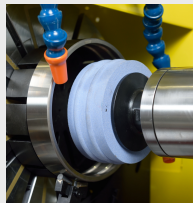
LOAD CHUCKED WORKPIECE

- up to 1200 kg



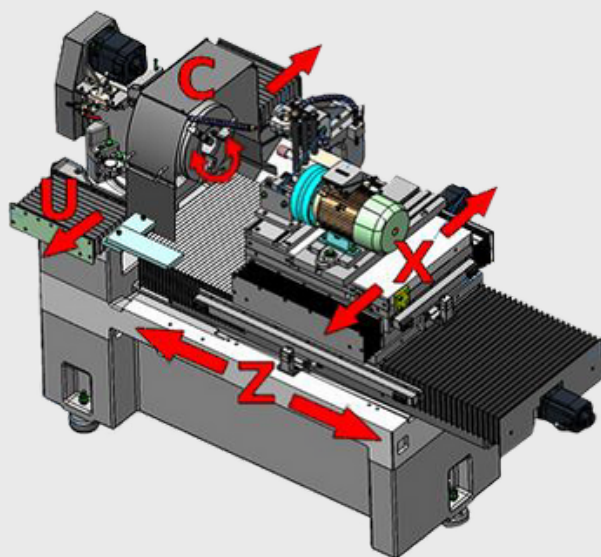
SWING DIAMETER

- up to 1200 mm



WORKPIECE RANGE

- Hole length up to 600 mm
- ID range $\text{O}15\text{-O}1000$ mm
- Max. workpiece length 700 mm



MACHINE BED

Machine bed made of grey cast iron. Very massive, solid, specially ribbed, naturally aged ensures thermal stability for a long life and complete stability of the process. FEM-optimized casting bed for high stability and durability.

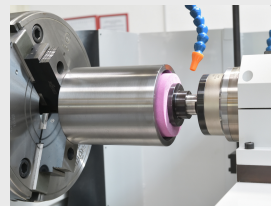
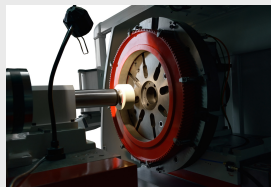
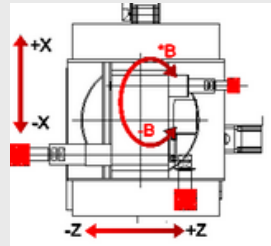
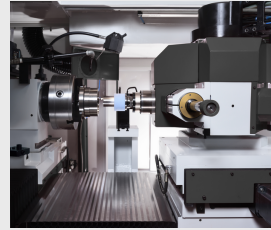
SLIDES

Wheelhead cross slide X-axis and longitudinal slide Z-axis on linear guideways, driven by ball screw spindles and AC servo motors. High resolution linear scales to control the position of X- and Z-axes. Workhead cross slide U-axis on linear guideways, driven by ball screw spindle and AC servo motor. High resolution linear scale to control the position of U-axis.



WHEELHEAD

- Grinding head for internal cylindrical, taper, face and complex profile grinding
- HF or belt driven internal grinding spindle
- Combination of high frequency grinding spindles for internal cylindrical, taper, face, complex profile grinding. Up to four grinding wheels.
- Continuous indexing function on wheelhead
- Ceramic, CBN or diamond grinding wheel



CNC OR NC CONTROLLER

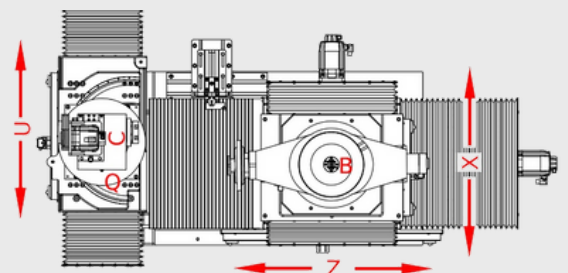
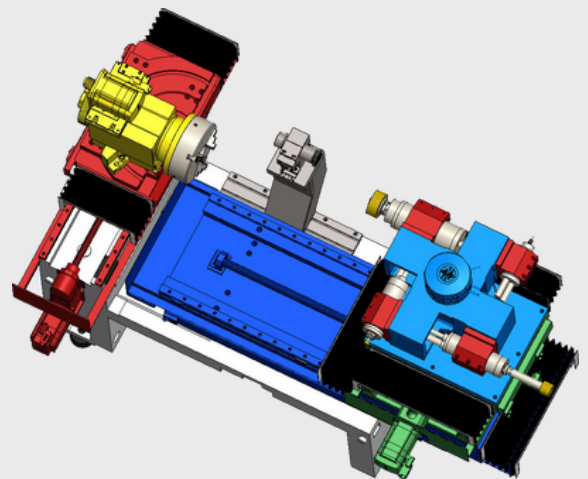
User friendly, with flexible programming options and graphical interface. Availability of input data for analysis and process improvement.

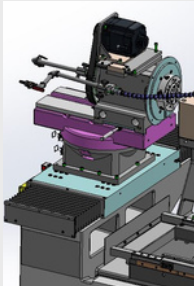
Ergonomic control panel, with touch screen, standard keyboard, USB ports.

System set-up through Dialogs and Menu, NC programming not required.

B-AXIS

Turret wheelhead with rotary encoder and pneumatic brake for accurate positioning of grinding spindle. With B-axis, up to four grinding spindles can be swiveled to the grinding position. That enables complete grinding to be performed in single clamping. Additionally, touch probe can be mounted for measurement tasks (diameters, face position/distance).





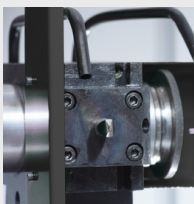
WORKHEAD

- C-axis rotation control
- Hydrodynamic bearing
- Hydrostatic bearings
- Pneumatic or hydraulic clamping
- Custom tooling for clamping
- Q-axis automatic swiveling



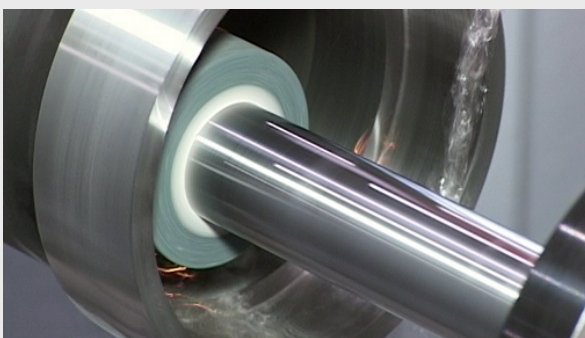
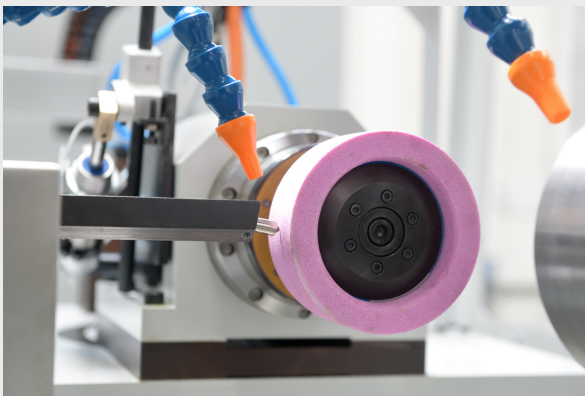
WHEELHEAD

- Hydrodynamic, hydrostatic, hybrid ceramic bearing
- Turret wheel head (B-axis)
- Ceramic, CBN, Diamond grinding wheel



WHEEL DRESSING

- Single point diamond
- Diamond roll/disc
- CNC wheel dresser



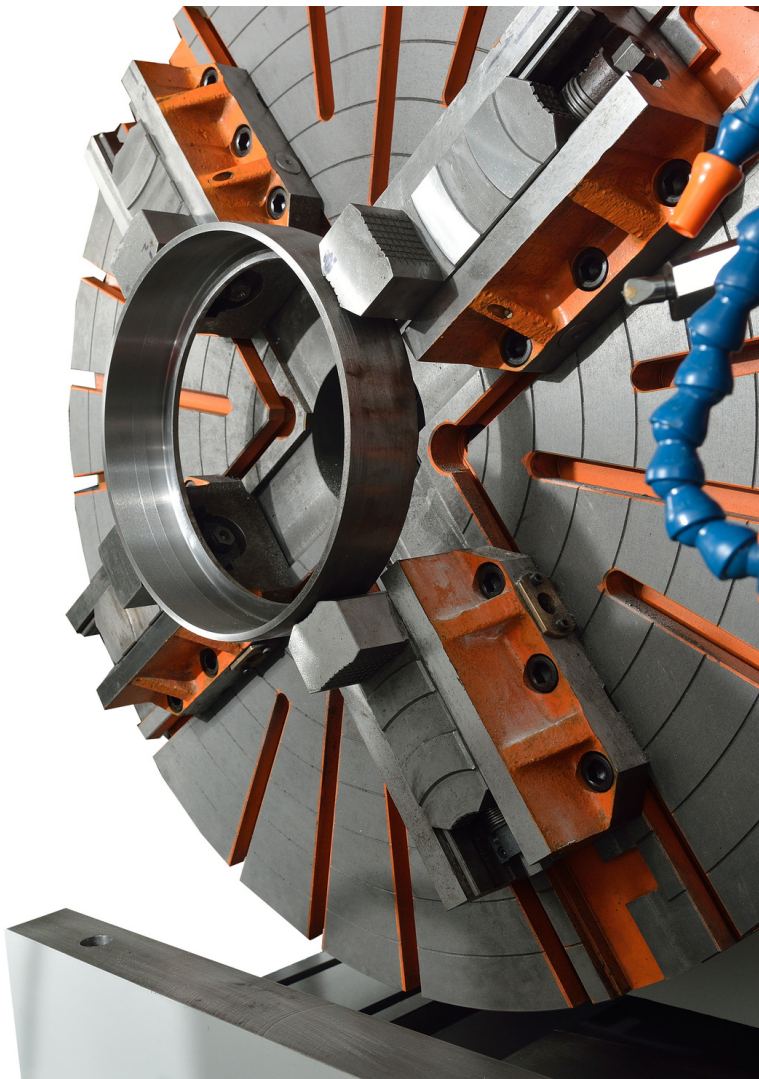
C-AXIS

The option for non-round applications. Interpolating the axes provides possibility to grind non-round applications such as polygons or eccentric forms.

Q-AXIS

Workhead automatic swiveling can be added optionally and offers following advantages:

- Automatic swiveling for taper grinding
- Accessibility for measuring
- Accessibility for manual or automatic workpiece changeover
- Easy tooling changeover

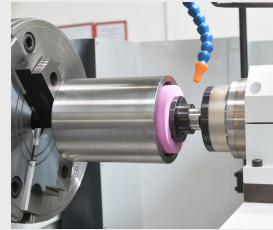


IN-PROCESS DIAMETER GAUGING SYSTEM

The system of measuring in-time significantly improve cycle time, keep the dimensional and geometrical process stability within very narrow tolerance ranges. The machine collects data in real time so it has possibility to correct even smallest deviation immediately.

AUTOMATIC WORKPIECE LOADING/UNLOADING SYSTEM

Requirements of completely automated manufacturing processes are fulfilled with the incorporation of customised Grindex automatic loading systems e.g. integrated gantry or robot solutions or custom tailored systems. Grindex offers both internal and external loading systems.



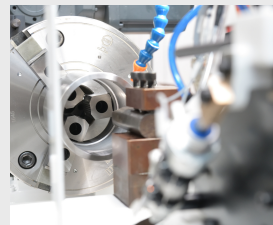
INTERNAL GRINDING SPINDLE

- Belt driven spindle up to 40000 rpm
- HF spindle up to 45000 rpm
- Commercial and Grindex (belt driven) spindles



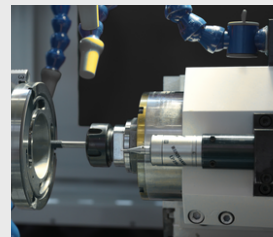
CLAMPING SYSTEM

- 3 or 4 jaws chuck clamping
- Magnetic chuck
- Power actuated clamping system
- Custom tooling



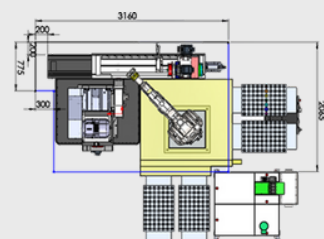
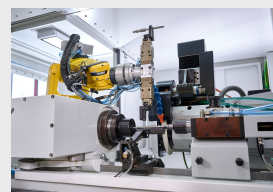
GAUGING AND CONTROL

- In-process and post-process gauging system
- Touch probe for workpiece axial positioning
- Gap-crash - gap, crash, dressing and position control for grinding wheel



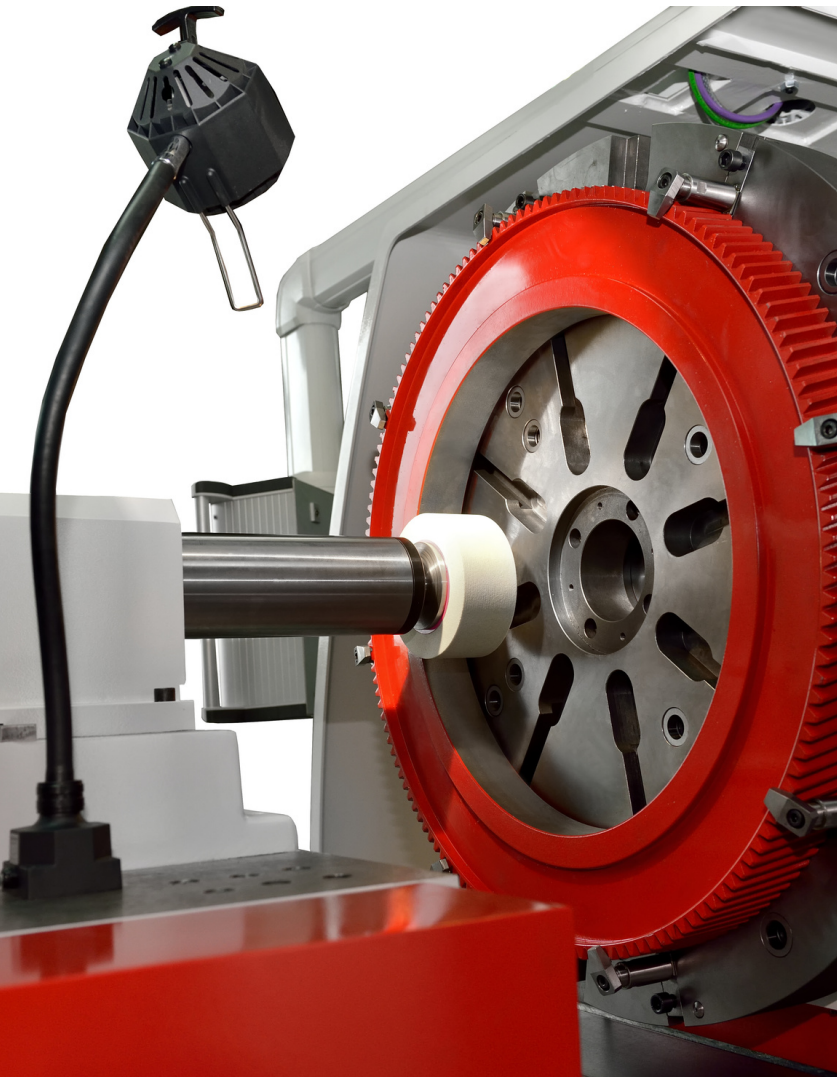
AUTOMATION SYSTEM

- Robot
- Gantry loader



MBU

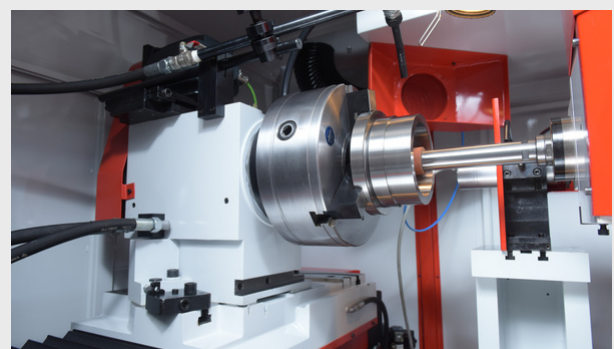
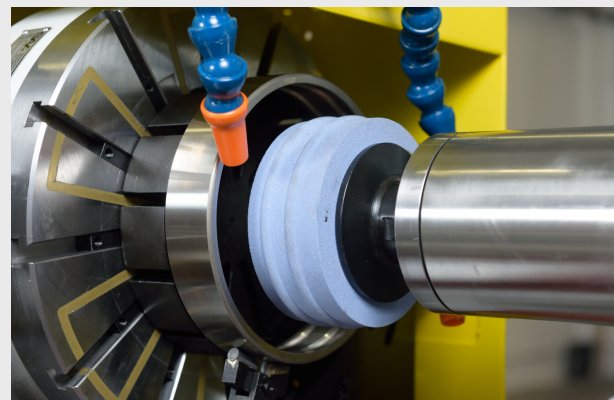
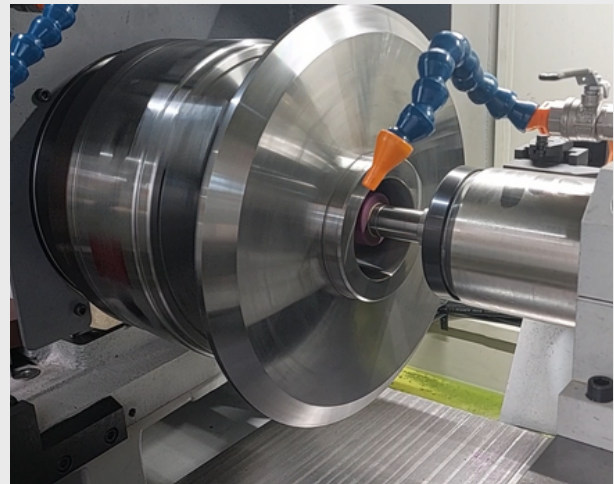
CUSTOMIZED SOLUTIONS



TECHNOLOGICAL EXPERTISE

We strive to talk to the customer. Our engineers and technicians cooperate with customer in order to supply perfect machine. Grindex provides technological expertise with flow of operations, grinding and dressing method, chuck system proposal, control/gauging system proposal, automation system proposal etc. with priority to reduce cycle time and achieve the best possible workpiece quality.

MACHINING EXAMPLES



TECHNICAL DATA

Main data	MBU 600	MBU 850	MBU 1000	MBU 1200
· Internal diameter range	∅15 - ∅500 mm	∅80 - ∅700 mm	∅150- ∅800 mm	∅150 - ∅1000 mm
· Swing diameter	600 mm	850 mm	1000 mm	1200 mm
· Max. workpiece length	500 mm		700 mm	
· Max. internal grinding length	400 mm		600 mm	
· Max. workpiece weight	300 kg	500 kg	800 kg	1200 kg
Wheelhead cross slide X-axis				
· Travel	180-440 mm			
· Max. speed	up to 8000 mm/min			
· Resolution	0,0001 mm			
Wheelhead longitudinal slide Z-axis				
· Travel	800/1250 mm			
· Max. speed	up to 6000 mm/min			
· Resolution	0,0001 mm			
B-axis				
· Swivel range	-30° /+210 °			
· Resolution	1"			
· Max. speed	3 600 °/min			
Workhead				
· Rotation speed	0,1-500/0,1-200 rpm			
· Motor power	28/48 Nm			
· Interface	A6/A11/A14/DIN 55026			
· C-axis resolution	20"			
· Swivel angle	0 - 90°			
· Workhead cross slide travel U-axis	350/400/500 mm			
Controller	Siemens Sinumerik One, Siemens Simatic, NUM			

GRINDEX



Address

Miloša Velikog 80, 23300 Kikinda, Serbia



Telephone

+381 230 315 101



E-mail

info@grindex.rs